

Common Design and Construction Violations and Solutions



Participant Manual



(888) 341-7781 (V/TTY) - Technical Guidance
www.FairHousingFIRST.org

2005-2006



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for
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Participant Manual Table of Contents

Using the Participant Manual	2
Overview of the Fair Housing Act	13
Requirement 1	30
Requirement 2	39
Requirement 3	55
Requirement 4	64
Requirement 5	75
Requirement 6	82
Requirement 7	89
Resources	104

Using the Participant Manual

Manual Layout and Content

As a participant in the course, the Participant Manual serves as your focal point. It follows the sequence of the class activities and discussion topics. It includes:

- All slides presented by the instructor
- Space for you to take notes
- Key points not contained on slides
- Detailed instructions for exercises
- Resources to supplement the curriculum



Welcome to Fair Housing Accessibility FIRST, a training and technical guidance program created by the U.S. Department of Housing and Urban Development (HUD).

This session is one hour and a half in length.

Fair Housing Accessibility

FIRST

- ☐ Offer training and technical guidance on accessibility requirements of the Fair Housing Act
- ☐ Increase the supply of accessible multifamily housing units nationwide

Notes:

Fair Housing Accessibility **FIRST**



Gathered opinions and ideas from over 850 stakeholders

Stakeholder Groups

- Builders
- Disability rights advocates
- Government officials
- Trade associations
- Property managers
- Media
- Code officials
- Enforcement agencies

Notes:

Fair Housing Accessibility **FIRST**

- ☐ Comprehensive training curriculum
- ☐ Technical guidance via a website and toll free hotline
 - 1-888-341-7781v/TTY
 - www.FairHousingFIRST.org

Notes:

Refer to the Fair Housing Accessibility FIRST Training Curriculum.

Common Design and Construction Violations and Solutions - Introduction

During this training session, we will discuss:

- The seven design and construction requirements of the Fair Housing Act
- The most common violations of each requirement
- The effect of the violations on people with disabilities
- Requirements for compliance
- Design techniques that will avoid violations

Notes:

Common Design and Construction Violations and Solutions - Introduction

At the end of the session, you will:

- Be able to list the seven design and construction requirements of the Fair Housing Act
- Be able to cite examples of the most common violations for each Fair Housing Act requirement
- Be able to identify the obstacles that Fair Housing Act violations present to persons with disabilities

Notes:

Common Design and Construction Violations and Solutions - Introduction

At the end of the session, you will:

- Be able to identify key solutions for some of the most common violations under each requirement
- Be able to list ways to avoid non-compliance related to each of the seven requirements

Notes:

Name four personal learning goals for this session.

Goals should be:

Specific
Measurable
Achievable
Relevant
Timely

Example: I will learn three ways to avoid violating the requirements of the Fair Housing Act.

Common Design and Construction Violations and Solutions - Introduction

- ☐ Small group exercises will be conducted to reinforce key concepts you have learned
- ☐ You are encouraged to ask questions throughout the training session
- ☐ A questionnaire will be distributed to obtain your feedback on training content, delivery, and materials



Notes:

Who is in your small group?

What are their occupations?

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

History of the Fair Housing Act



Fair Housing Act was passed in **1968**

Fair Housing Amendments Act, with new coverage of disability, was enacted in **1988**

Enforced by:



- The Department of Housing and Urban Development
- The Department of Justice
- State and local fair housing enforcement agencies
- Private lawsuits in federal and state courts



History of the Fair Housing Act

The Fair Housing Act was first passed in 1968, shortly after the assassination of Dr. Martin Luther King, and it prohibited discrimination based on race, color, religion and national origin. Discrimination based on sex was added in 1974. When the law was comprehensively amended in 1988, it was changed to include discrimination against people because of handicap and because of familial status—the presence of children under the age of 18. (During this training, we will refer to the Fair Housing Act's coverage of handicap discrimination as "disability" protections. "Disability" is the preferred term.)

The Fair Housing Act is enforced administratively by the U.S. Department of Housing and Urban Development (HUD). People who believe that they have been harmed by a violation of the Act may file administrative complaints with HUD, and HUD conducts an impartial investigation of the claims.

The Act also authorizes federal lawsuits by the U.S. Department of Justice, and private lawsuits that can be filed in federal or state courts by individuals. Many state and local fair housing enforcement agencies also have authority to investigate violations and bring enforcement actions. The general authority for all of these enforcement activities is found in the Fair Housing Act. So the enforcement authority given under the Act is quite broad.

History of the Fair Housing Act (continued)

Where violations of the law are established, remedies under the Fair Housing Act may include the award of compensatory damages to victims of discrimination, sometimes numbering in the hundreds of thousands of dollars, orders for comprehensive corrective action, and awards of punitive damages to victims or civil penalties to the government. In design and construction cases, remedies also may require retrofitting housing that has already been constructed to make it comply with the Act's design and construction requirements.

Notes:

Units Covered by the Fair Housing Act

- ☐ The design and construction requirements apply to “covered multifamily dwellings” designed and constructed for first occupancy after March 13, 1991



Units Covered by the Fair Housing Act

The Fair Housing Act design and construction requirements apply to “covered multifamily dwellings” designed and constructed “for first occupancy” after March 13, 1991.

A building was not designed or constructed for first occupancy if:

- It was occupied on or before March 13, 1991
- If the last building permit or renewal of a building permit was issued on or before June 15, 1990

Buildings where the last building permit was issued on or before June 15, 1990 are not covered by the design and construction requirements. Even if the last building permit was issued after June 15, 1990, if the building was occupied before March 13, 1991, it is not covered. HUD adopted these dates to allow time for the requirements to be considered during the design and construction phase of new properties.

The “first occupancy” language in the statute has been defined in HUD’s Fair Housing Act regulations as “a building that has never before been used for any purpose.” This means buildings that are rehabilitated are not covered by the design and construction requirements even if rehabilitation occurs after March 13, 1991 and even if it is substantial rehabilitation.

Units Covered by the Fair Housing Act

Covered Multifamily Dwellings Include:

- All dwelling units in buildings containing four or more units, with an elevator
- All ground floor units in buildings containing four or more units, without an elevator

Units Covered by the Fair Housing Act (cont)

A dwelling unit includes:

- A single-family unit in buildings with four or more units
- An apartment
- A room in which people sleep even if they share kitchens or bathrooms, like transitional housing

The design and construction requirements apply to “covered multifamily dwellings.” Covered multifamily dwellings are:

1. All dwelling units in buildings containing four or more dwelling units if the buildings have one or more elevators AND
2. All ground floor units in other buildings containing four or more units, without an elevator.

This includes housing that is for rental or for sale and applies whether the housing is privately or publicly funded.

Condominiums and apartment buildings are covered by the design and construction requirements. So are time-shares, dormitories, transitional housing, homeless shelters that are used as a residence, student housing, assisted living housing, and others.

Scoping Parameters of the Fair Housing Act

☐ What is Covered

Housing in buildings with four or more units

- In elevator buildings, all units
- In buildings without an elevator, ground floor units
- Constructed for first occupancy after March 13, 1991

☐ What is **not** Covered

- Detached single family houses
- Duplexes or triplexes
- Multistory townhouses

☐ Special Issues

Scoping Parameters of the Fair Housing Act

So, housing in buildings with four or more units is covered, if built after March 13, 1991. In elevator buildings, all units are covered. In buildings without elevators, ground floor units are covered.

There are some kinds of units that are not covered by the Fair Housing Act's design and construction requirements. First, buildings that were designed and constructed for first occupancy before March 13, 1991 are not covered.

Because of the way that "covered multifamily dwellings" are defined, buildings with three or fewer units are also not covered by the design and construction requirements. Detached single family houses and duplexes and triplexes are not covered.

Another common situation that is not covered are multistory townhouses. Townhouses with finished living space on more than one level are not covered, unless there is an elevator in the building. If none of the covered units are required to be accessible because they are all multi-story townhouses, the Fair Housing Act does not require that the public and common use areas be accessible.

Scoping Parameters of the Fair Housing Act (continued)

But remember that other federal laws, such as Title III of the Americans with Disabilities Act, may require rental and sales offices to be accessible regardless of whether the Fair Housing Act would require them to be accessible.

The Act does not require any specific number of accessible dwelling units in a project, such as 5%. Rather, all units in buildings with elevators and all ground floor units in buildings without elevators are covered.

Notes:

Other Key Issues

- ☐ Dwelling units where four or more units are separated by a breezeway or stairway are covered
- ☐ Dwelling units in a single structure and separated by firewalls are covered
- ☐ Additions of four or more units that are added to buildings built before March 13, 1991 are covered
- ☐ Alterations of dwelling units built before March 13, 1991 are NOT covered

Other Key Issues

There are a few other technical considerations about the general application of the design and construction requirements:

- Units that are connected by a breezeway or stairway are still considered to be in “a building with four or more units.”
- Dwelling units within a single structure that are separated by firewalls do not constitute separate buildings. So buildings with four or more units that are separated by firewalls are still covered multifamily dwellings.
- If additions of four or more units are added to existing buildings, they are covered by the design and construction requirements. If this happens, existing public and common use areas do not have to be made accessible simply because newly constructed dwellings are added. (However, if the entrance to an addition is through an existing building, that entrance and the route to it, must be made accessible.)
- The Fair Housing Act does not cover properties that existed before March 13, 1991 even if they are renovated after March 13, 1991. It also does not cover buildings that were used previously for purposes other than housing, that have been renovated since March 13, 1991, to include dwelling units. However, renovations of covered multifamily dwellings built in compliance cannot be altered in a way that makes them non-compliant.

Fair Housing Act – Seven Design and Construction Requirements

1. Accessible building entrance on an accessible route
2. Accessible and usable public and common use areas
3. Usable doors
4. Accessible routes into and through covered unit
5. Light switches, electrical outlets, thermostats, and other environmental controls in accessible locations
6. Reinforced walls in bathrooms for later installation of grab bars
7. Usable kitchens and bathrooms



Fair Housing Act – Seven Design and Construction Requirements

The Fair Housing Act's design and construction requirements are broken down into seven basic requirements.

1. Accessible building entrance on an accessible route
2. Accessible and usable public and common use areas
3. Usable doors
4. Accessible routes into and through covered unit
5. Light switches, electrical outlets, thermostats, and other environmental controls in accessible locations
6. Reinforced walls in bathrooms for later installation of grab bars
7. Usable kitchens and bathrooms

Fair Housing Act – Seven Design and Construction Requirements (continued)

1. The first is that all covered multifamily dwellings must have ***at least one building entrance on an accessible route*** unless it is impractical to do so because of the terrain or unusual characteristics of the site. Obviously, there is little point in having an accessible unit in buildings that people cannot enter.
 - An accessible route means a continuous, unobstructed path connecting accessible elements and spaces within a building or site that can be negotiated by a person with a disability who uses a wheelchair, and that is also safe for and usable by people with other disabilities.
 - An accessible entrance is a building entrance connected by an accessible route to public transit stops, accessible parking and passenger loading zones, or public streets and sidewalks.
2. The second requirement is that ***covered housing must have accessible and usable public and common use areas***. Public and common use areas cover all parts of the housing outside individual units. They include, for example: building-wide fire alarms, parking lots, storage areas, indoor and outdoor recreational areas, lobbies, mailrooms and mailboxes, and laundry areas.
3. The third requirement is that all ***doors that allow passage into and within all premises must be wide enough to allow passage by persons using wheelchairs***.
4. The fourth requirement is that ***there must be an accessible route into and through each covered unit***.
5. The fifth requirement is that ***light switches, electrical outlets, thermostats and other environmental controls must be in accessible locations***.
6. The sixth requirement is ***reinforcements in bathroom walls so that grab bars can be added when needed***. The law does not require installation of grab bars in bathrooms.
7. The seventh requirement is that ***kitchens and bathrooms must be usable*** – that is, designed and constructed so an individual in a wheelchair can maneuver in the space provided.

Fair Housing Act – Safe Harbors for Compliance

1. HUD Fair Housing Accessibility Guidelines and the Supplemental Notice
2. ANSI A117.1 (1986), used with the Fair Housing Act, HUD's regulations, and the Guidelines
3. CABO/ANSI A117.1 (1992) used with the Fair Housing Act, HUD's regulations, and the Guidelines
4. ICC/ANSI A117.1 (1998) used with the Fair Housing Act, HUD's regulations, and the Guidelines
5. The Fair Housing Act Design Manual (1998)
6. Code Requirements for Housing Accessibility 2000 (ICC/CRHA)
7. International Building Code 2000 with 2001 Supplement
8. International Building Code 2003, with one condition*

Fair Housing Act – Safe Harbors for Compliance

There are eight safe harbors for compliance with the Fair Housing Act. Compliance with any one of the eight will fulfill the Fair Housing Act's access requirements.

If a particular safe harbor is chosen for use in a particular property, housing must comply with all of the provisions of that safe harbor in order for there to be a safe harbor. So it is unwise to pick and choose among the provisions of different safe harbor standards.

These are the eight access standards that HUD has identified as safe harbors:

1. *The Fair Housing Act Accessibility Guidelines* (issued on March 6, 1991), and the Supplemental Notice to Fair Housing Accessibility Guidelines: Questions and Answers about the Guidelines (issued June 28, 1994).
2. *ANSI A117.1 (1986)*, used with the Fair Housing Act, HUD's Fair Housing Act regulations, and the Guidelines.
3. *CABO/ANSI A117.1 (1992)*, used with the Fair Housing Act, HUD's Fair Housing Act regulations, and the Guidelines.
4. *ICC/ANSI A117.1 (1998)*, used with the Fair Housing Act, HUD's Fair Housing Act regulations, and the Guidelines.

**Fair Housing Act –
Safe Harbors for Compliance (continued)**

5. *The Fair Housing Act Design Manual (1998).*
6. *Code Requirements for Housing Accessibility 2000 (CRHA)*, published by the International Code Council in October, 2000.
7. *International Building Code 2000 (IBC)*, as amended by the IBC's 2001 Supplement to the International Codes.
8. *International Building Code 2003(IBC)*, with one condition.*

- * Effective February 28, 2005 HUD determined that the IBC 2003 is a safe harbor, conditioned upon ICC publishing and distributing a statement to jurisdictions and past and future purchasers of the 2003 IBC stating, "ICC interprets Section 1104.1, and specifically, the exception to Section 1104.1, to be read together with Section 1107.4, and that the Code requires an accessible pedestrian route from site arrival points to accessible building entrances, unless site impracticality applies. Exception 1 to Section 1107.4 is not applicable to site arrival points for any Type B dwelling units because site impracticality is addressed under Section 1107.7."

It is important to note that the ANSI A117.1 standard contains only technical criteria, whereas the Fair Housing Act, the regulations and the Guidelines contain both scoping and technical criteria. Therefore, in using any of the ANSI standards it is necessary to also consult the Act, HUD's regulations, and the Guidelines.

Other means of providing access that provide an equal or greater degree of accessibility may also be used to comply with the Fair Housing Act's access requirements, but they are not a safe harbor.

This training relies on the provisions of the Fair Housing Act, the Guidelines and Supplemental Questions and Answers, ANSI A117.1 (1986) and the Fair Housing Act Design Manual for the guidance that it provides about compliance with the technical design and construction requirements in the Act.

CAUTION:

Safe harbor standards constitute safe harbors only when adopted and implemented in accordance with the policy statement that HUD published in the Federal Register on March 23, 2000. That policy statement notes, for example, that if a jurisdiction adopts a model building Code that HUD has determined conforms with the design and construction requirements of the Act, then covered residential buildings that are constructed in accordance with plans and specifications approved during the building permitting process will be in compliance with the requirements of the Act unless the building code official has waived one or more of those requirements or the building code official has incorrectly interpreted or applied the building code provisions. In addition, adoption of a HUD recognized safe harbor does not change HUD's responsibility to conduct an investigation if it receives a complaint.

Notes:

Importance of Attention to Access

- ☐ Accessibility is frequently measured in inches
- ☐ Accessibility requires attention to detail
- ☐ Accessibility requires conscious application of design principles



Importance of Attention to Access

Accessibility is often measured in inches. Careful attention to detail can make the difference between making a property fully usable, on the one hand, and making a property inaccessible, and potentially dangerous, on the other. Inches also can make the difference between compliance and non-compliance.

Even small deviations from requirements can make a unit completely unusable or create risk of injury to people trying to enter or use the unit.

A ramp that is too steep or that is sloped incorrectly, for example, can prevent a person in a wheelchair from using it or even create a situation where a wheelchair user tips over while using the ramp.

Accessible design requires conscious application of design principles, not guessing what might work best, or making assumptions about what might work in a particular situation.

Importance of Attention to Access



Importance of Attention to Access

This photograph illustrates the need for accessible design, and its importance to persons with disabilities.

Notes:

What Are Common Violations?

- ☐ There is documented non-compliance with the design and construction requirements
- ☐ The most common violations are drawn from enforcement, industry, and advocacy sources

Notes:

Refer to "Common Violations of the Fair Housing Act Design and Construction Requirements."

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Refer to page 1.1 of the Design Manual.

Requirement 1

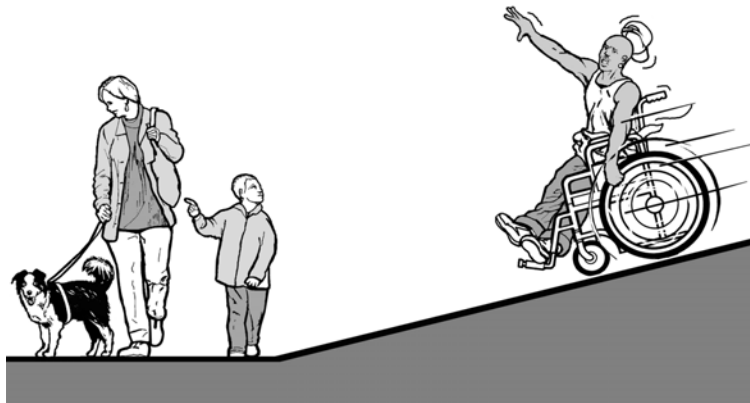
***An Accessible
Building Entrance on an
Accessible Route***

***“...Covered multifamily dwellings shall
be designed and constructed to have at least
one building entrance on an accessible route unless
it is impractical to do so because of terrain or
unusual characteristics of the site.”***

Notes:

Requirement 1 – What are the Common Violations?

- ☐ The entrance has steps or steep ramps



Notes:

Steps at Dwelling Entrance



Not Allowed

Steps at Dwelling Entrance

This photograph shows a multifamily dwelling with multiple steps up to the building entrance.

Requirement 1 requires at least one ground-floor entrance to be on an accessible route unless it is impractical due to terrain or unusual site characteristics.

The steps in this photograph are an obvious violation of Requirement 1.

Notes:

Steep Entrance Walk



Not Allowed

Steep Entrance Walk

This photograph shows a very steep entrance walk leading from the parking area to the dwelling entrance.

Entrance walks required to be accessible under Requirement 1 must connect the building entrance with pedestrian arrival points—in most cases to parking areas. The specifications that required entrance walks must comply with are found in the ANSI standard. Some of the key features that walks must have are:

- Slopes that do not exceed 1:20 (one inch of rise for every 20 inches of run, or length).
- Or, if slopes exceed 1:20, walks must be designed as ramps. Ramps must have railings on both sides, have edge protection, and appropriate size landings at the top and bottom of the ramp. Ramps must not have slopes that are steeper than 1:12.

The walk in this photograph has slopes in excess of 1:20. It therefore should meet the specifications for ramps. However, it does not have railing or edge protection and it may have a slope greater than 1:12.

What's the Solution?

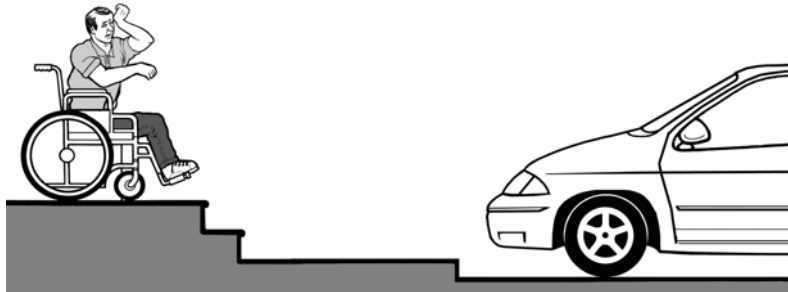
- ☐ Provide entrance walks with slopes not greater than 1:20



Notes:

Requirement 1 What are the Common Violations?

- ☐ There is no connection between the building entrance and pedestrian arrival areas



Not Allowed

Notes:

No Curb Ramp or Access Aisle



Not Allowed

No Curb Ramp or Access Aisle

This photograph shows an entrance walk that doesn't lead from the building entrance to a pedestrian arrival area, in this case a parking lot. There is no curb ramp provided at the access aisles.

When entrance walks are required to be accessible under Requirement 1, they must be accessible and lead from the dwelling entrance to the pedestrian arrival area.

When accessible walks lead to a parking area there must not be any steps. Curb ramps must be provided or a curbless design may be used to provide access.

Access aisles must adjoin an accessible route to the walks.

What's the Solution?

- ☐ An accessible route to pedestrian arrival points



Notes:

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Requirement 2

Accessible and Usable Public and Common Use Areas

“...covered multifamily dwellings with a building entrance on an accessible route shall be designed in such a manner that the public and common use areas are readily accessible to and usable by [people with disabilities].”

Notes:

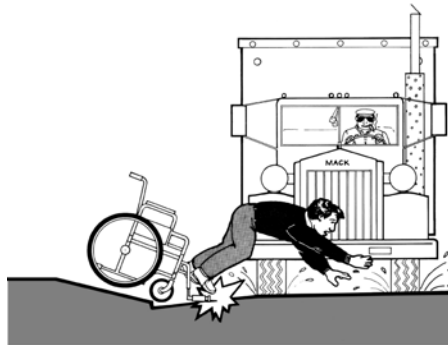
Requirement 2

What are the Common Violations?



Curb ramps:

- Are too steep,
- Have steep flared edges, or
- Are only accessed from heavily trafficked areas



Not Allowed

Requirement 2: What are the Common Violations?

A common violation is the provision of curb ramps providing access to various parts of public and common use areas that are steep, have steep flared edges, or are accessed only from or into heavily trafficked areas.

Curb ramps come in a variety of shapes and sizes. But regardless of their configuration, they are a key way to access different parts of a property.

If they are too steep, they can be dangerous or unusable. If they consist only of a pile of asphalt, they may lack sufficient width or side wings, which may cause people using them to fall off the sides.

If the curb ramps place their users in areas where vehicles travel, they can result in avoidable traffic accidents.

Improperly designed curb ramps, also known as curb cuts, can be a hazard for all residents if they are not placed thoughtfully and constructed according to standards.

Improperly Designed Curb Ramp



Not Allowed

Improperly Designed Curb Ramp

This photograph shows a curb ramp that does not comply with ANSI A117.1 (1986), as required by the Guidelines. Some of the key features that curb ramps must have are:

1. Running slopes that do not exceed 1:12.
2. A total vertical rise that does not exceed 6 inches, unless handrails are provided.
3. A width not less than 36 inches.
4. Side flares that are sloped 1:10 or less and sometimes 1:12 or less, depending on the design of adjacent sidewalks.

Since this ramp protrudes out into the parking area, it is required to have flared edges on both sides. This ramp has an abrupt drop off on the edge facing the parking lot, which could prove a hazard for someone who may fall off the edge. Protruding ramps such as this should have flared edges or the edge may be protected by a raised curb along the exposed edge.

Side Flares Too Steep



Not Allowed

Side Flares Too Steep

This illustration shows a curb ramp that forms part of the walkway, subject to pedestrian cross traffic.

The Guidelines and ANSI require curb ramps that are subject to cross traffic to have side flares that are gently sloped no steeper than 1:12.

The side flares on this ramp are too steep.

Notes:

What's the Solution?

- ☐ Curb ramps are correctly designed and graded to provide access

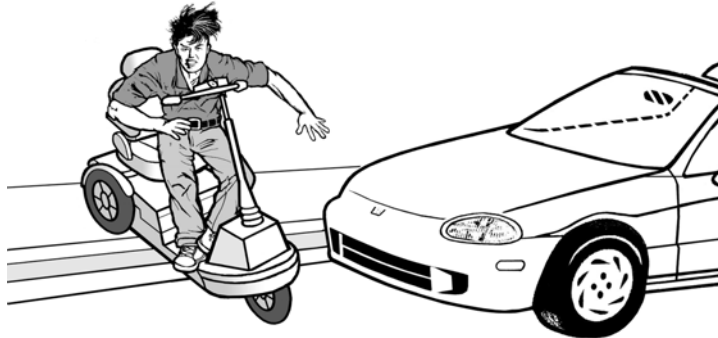


Notes:

Requirement 2

What are the Common Violations?

- ☐ There are not enough curb ramps to provide an accessible route



Not Allowed

Notes:

No Curb Ramp



Not Allowed

Notes:

No Curb Ramp



Not Allowed

Notes:

Accessible Route Blocked by Parked Cars



Not Allowed

Accessible Route Blocked by Parked Cars

This photograph provides an example of an accessible route that will be blocked by cars.

This sidewalk leads to a bus stop visible in the distance. When cars are parked, access to this facility would be denied to people who use wheelchairs or other mobility aids.

There must be an access aisle in the parking lot to provide permanent access to the walkway.

Notes:

What's the Solution?

- ☐ Provide curb ramps along all pedestrian walkways throughout the property

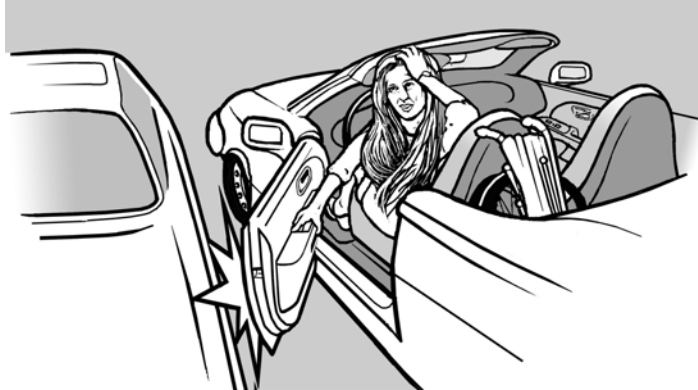


Notes:

Requirement 2

What are the Common Violations?

- ☐ There is no accessible parking at site facilities where parking is provided



Not Allowed

Notes:

No Accessible Parking at Facility



Not Allowed

No Accessible Parking at Facility

This photograph shows a community mail room in a multifamily development. The Guidelines, in Requirement 2, require that accessible parking be provided at public and common use facilities where parking is provided.

This provision allows persons with mobility disabilities to drive to the facility and access it.

An accessible parking space must be designed and built according to specifications in the ANSI standard. Some key features required are:

1. A parking space at least 8 feet wide with signage showing the symbol of accessibility;
2. A 5 foot minimum width transfer/access aisle adjacent to the parking space, that is also on an accessible route to the facility. This allows a person using a wheelchair to transfer out of their vehicle and access the facility.

What's the Solution?

- ☐ **Provide accessible parking at public and common use areas where parking is provided**
 - ✓ Rental and management offices
 - ✓ Model units
 - ✓ Mail box kiosks
 - ✓ Swimming pools
 - ✓ Tennis courts
 - ✓ Club houses
 - ✓ Garbage dumpsters
 - ✓ Playgrounds

Notes:

What is the Solution?



Notes:

Notes:

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Requirement 3

Usable Doors

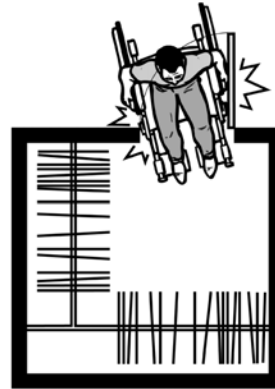
“...covered multifamily dwellings with a building entrance on an accessible route shall be designed in such a manner that all the doors designed to allow passage into and within all premises are sufficiently wide to allow passage by handicapped persons in wheelchairs.”

Notes:

Requirement 3

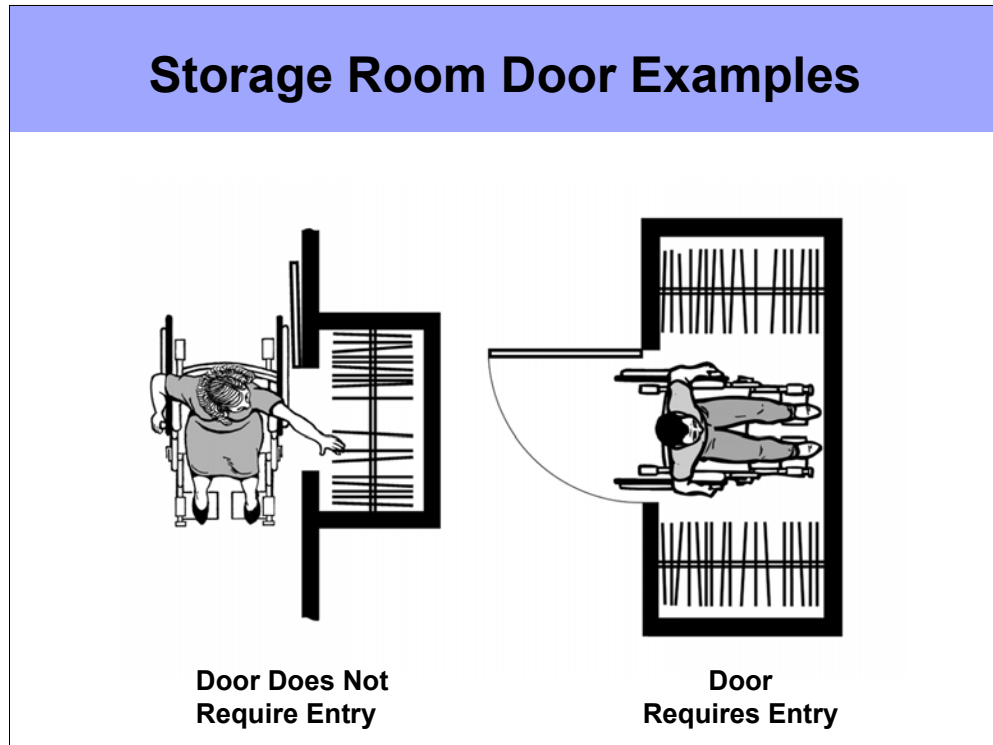
What are the Common Violations?

- ☐ Doors in the interior of dwelling units, especially closet and storage room doors, are not wide enough



Not Allowed

Notes:



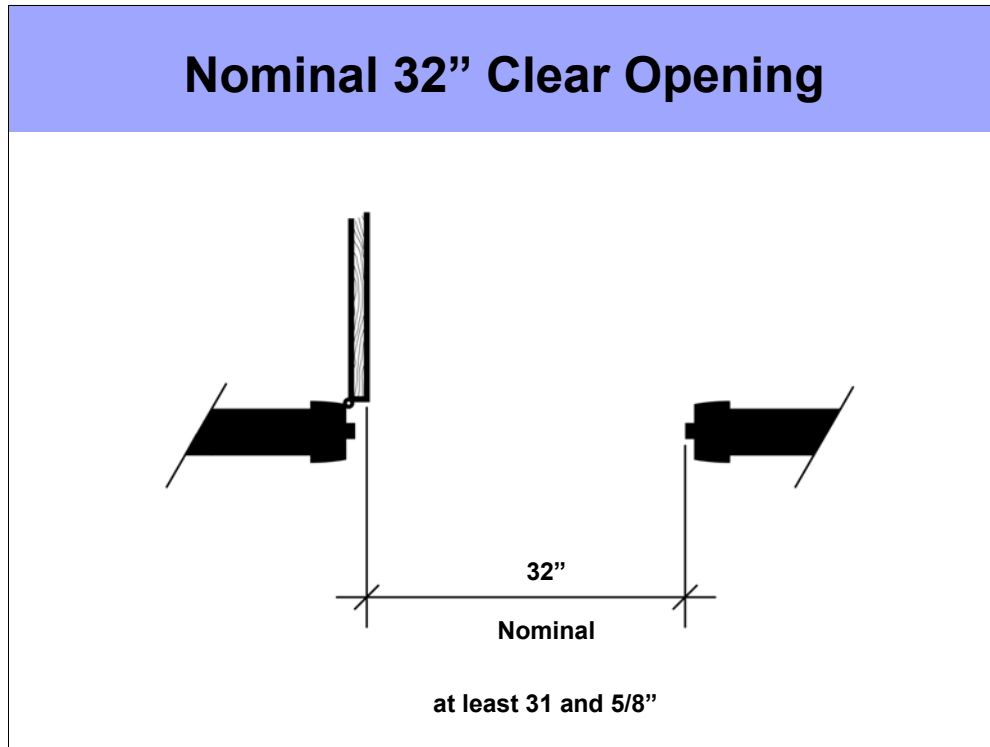
Storage Room Door Examples

The floor plan illustrations show two closets.

The closet on the left is a reach-in closet that can be accessed. Since the door is not a door intended for passage, it may be of any width. The maximum depth for a reach-in closet is 24".

The closet on the right is a deeper closet that requires passage through the door to access the closet. Because it is a door intended for passage it would be required to provide a nominal 32" clear opening.

This discussion applies to all storage type rooms within covered dwellings including closets, storage rooms, and kitchen pantries.



Nominal 32" Clear Opening

The Guidelines adopt the term “nominal” to distinguish between the door width requirement in the interior of dwelling units from the door width in public areas that must provide an actual 32” clear opening.

This specification allows builders and designers to use standard 34” wide doors which sometimes are shy of providing an actual 32” clear opening. A nominal 32” clear opening is between 31 5/8” and 32” wide.

Notes:

What's the Solution?

- ❑ **Construct all interior doorways intended for passage with a nominal 32" clearance**

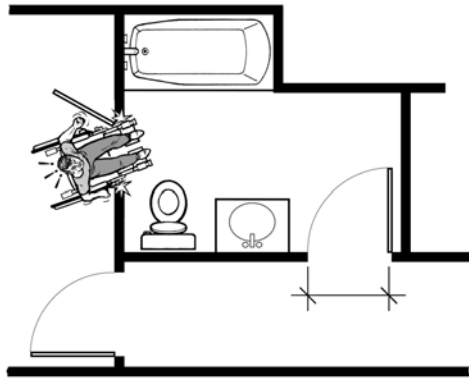


Notes:

Requirement 3

What are the Common Violations?

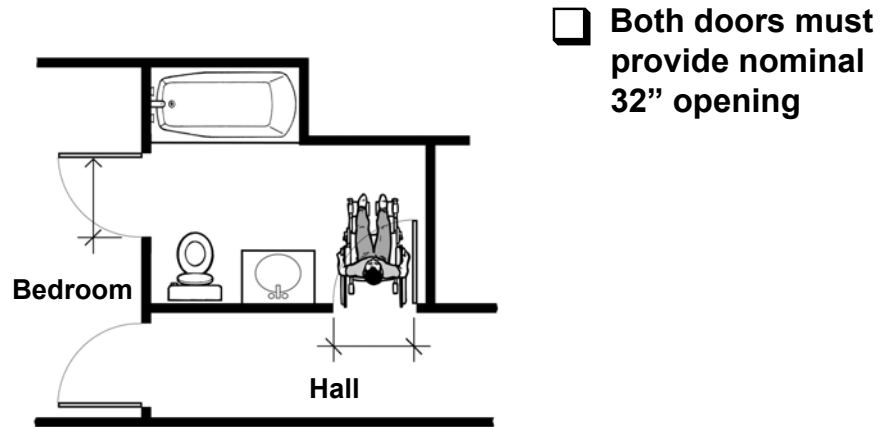
- ☐ A second door to a bathroom is not wide enough



Not Allowed

Notes:

Two Doors Into a Bathroom



Notes:

What's the Solution?

- ☐ All bathroom doors should be wide enough for access



Notes:

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Refer to page 4.1 of the Design Manual.

Requirement 4

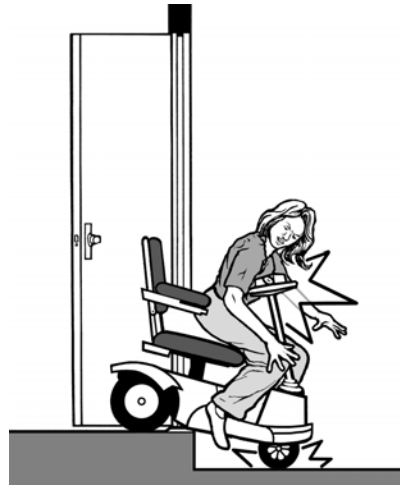
Accessible Route Into and Through the Unit

“...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain an accessible route into and through the covered dwelling unit.”

Notes:

Requirement 4 What are the Common Violations?

- ☐ Level changes at primary entrances are too high



Not Allowed

Notes:

Step at Primary Entry Door



Not Allowed

Step at Primary Entry Door

Under Requirement 4, the Guidelines specify that the primary exterior entrance landing to a ground floor dwelling must be no more than 1/2" below the finish floor of the unit if the landing is made of impervious material, like concrete. At the primary entrance, if the landing is of pervious material (i.e., wood decking) the landing must be flush with the finish floor.

This photograph shows a common violation, where the entrance landing is 4" to 5" below the floor of the dwelling.

Notes:

Step at Primary Entry Door



Not Allowed

Step at Primary Entry Door

This photograph provides another example of a step at a primary entry door, this time only 1" to 2" below the finish floor of the unit.

Frequently, the architectural plans may specify that the landing be flush with the finish floor, but during construction the contractor may drop the landing a few inches, following a convention which is not allowed.

Notes:

What's the Solution?

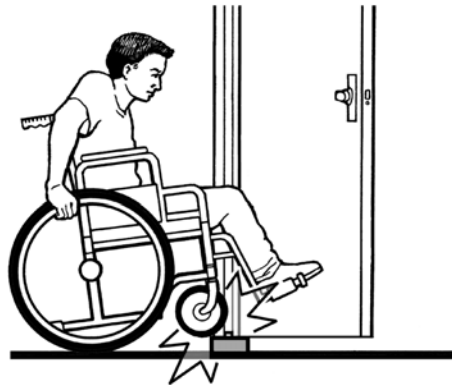
- ☐ Eliminate level changes at entrance doors



Notes:

Requirement 4 What are the Common Violations?

- ☐ Exterior door thresholds are too high



Not Allowed

Notes:

Threshold Too High



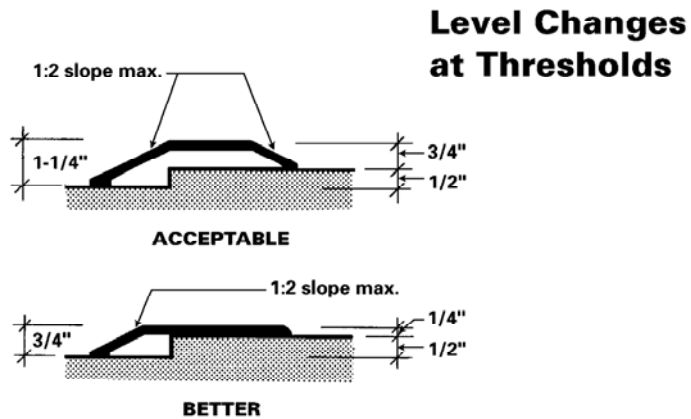
Not Allowed

Threshold Too High

This photograph shows a threshold with an abrupt level change.

The Guidelines require that exterior door thresholds must be no higher than 3/4" above finish floor, and they must be beveled 1:2 or less.

Exterior Entrance Doors



Exterior Entrance Doors

These cross sections show two compliant solutions for a primary entrance door.

The top profile is the absolute maximum allowed by the Guidelines:

1. The exterior landing is dropped 1/2" below finish floor.
2. The top of the threshold is 3/4" above finish floor.
3. From the exterior, the top of the threshold is 1 1/4" above the landing.
4. Both the interior and exterior sides of the threshold must be beveled 1:2 or less.

Exterior Entrance Doors (continued)

The bottom diagram shows a flatter design that exceeds Guideline specifications. The top of the threshold is only 1/4" above finish floor.

1. The exterior landing is still dropped 1/2", leaving the top of the threshold from the exterior 3/4" above the landing.
2. The exterior of the threshold must be beveled 1:2 or less. The interior side does not have to be beveled because abrupt level changes up to 1/4" are allowed.

Notes:

What's the Solution?

- ☐ Door thresholds are beveled 1:2 or less on both the interior and exterior edges and are less than $\frac{3}{4}$ " high



Notes:

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Refer to page 5.1 of the Design Manual.

Requirement 5

***Light Switches, Electrical Outlets,
Thermostats and Other
Environmental Controls in Accessible
Locations***

“...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain light switches, electrical outlets, thermostats and other environmental controls in accessible locations.”

Notes:

Requirement 5

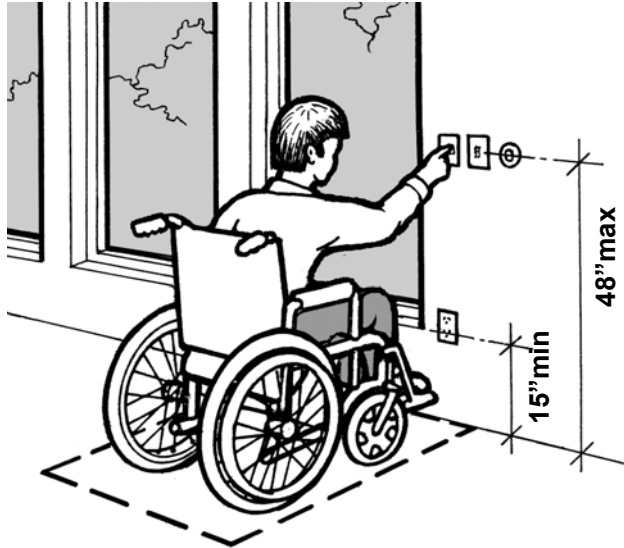
What are the Common Violations?

- ☐ Switches, electrical outlets, and other controls are placed too high or too low



Notes:

Correct Placement of Outlets and Switches



Correct Placement of Outlets and Switches

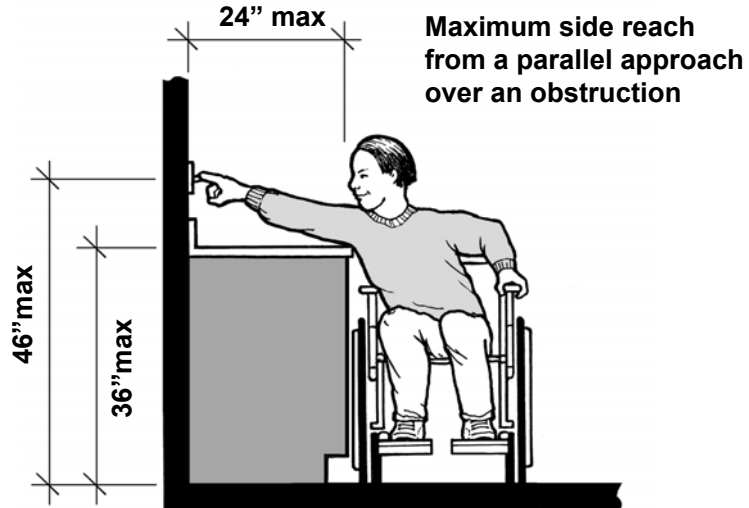
The Guidelines require that outlets be placed no lower than 15" above finish floor.

When a typical duplex outlet is used, both receptacles must be 15" above the floor.

Outlets, switches, and thermostats not located over countertops or other obstructions must be no higher than 48" above finish floor.

Notes:

Outlets and Switches Over Obstructions Without Knee Space

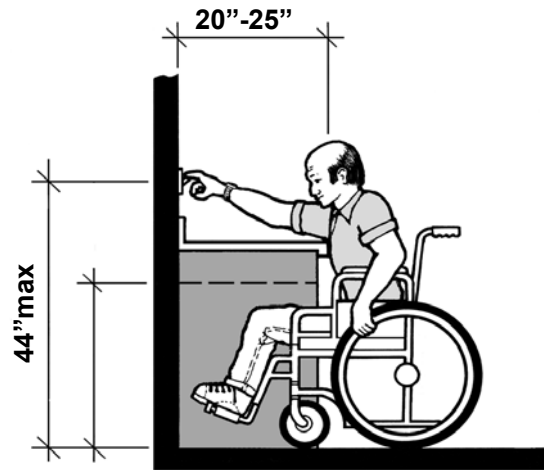


Outlets and Switches Over Obstructions Without Knee Space

Outlets and switches over kitchen counters must be placed appropriately to ensure that operable parts of the device are no higher than 46" above the finish floor.

Notes:

Outlets and Switches Over Obstructions With Knee Space



Outlets and Switches Over Obstructions With Knee Space

If outlets and switches are located over obstructions 20" - 25" deep and the obstruction has knee space, they must be no higher than 44" above the finish floor.

Notes:

What's the Solution?

- ❑ Place outlets so that both receptacles are at least 15" above the finished floor level



Notes:

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Refer to page 6.1 of the Design Manual.

Requirement 6

Reinforced Walls in Bathrooms For Later Installation of Grab Bars

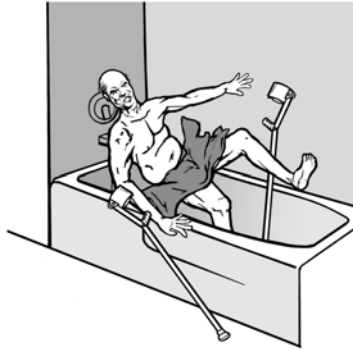
“...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in a manner that all premises within covered multifamily dwelling units contain reinforcements in bathroom walls to allow later installation of grab bars around toilet, tub, shower stall, and shower seat, where such facilities are provided.”

Notes:

Requirement 6

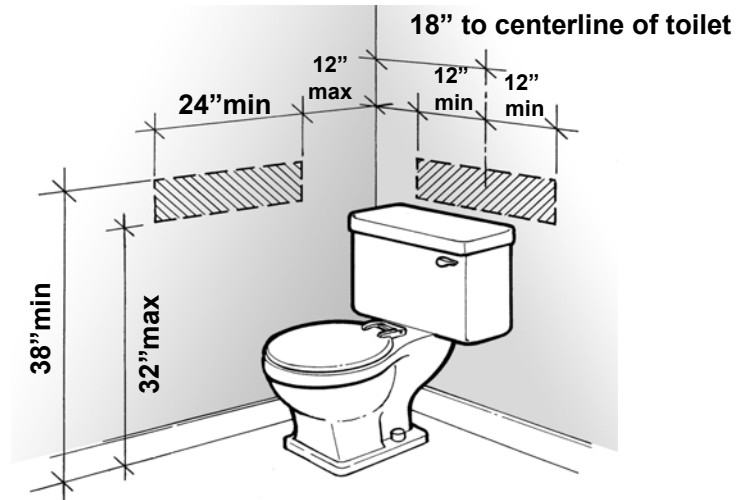
What are the Common Violations?

- ☐ Reinforcing is not placed in walls during construction so grab bars may be installed later



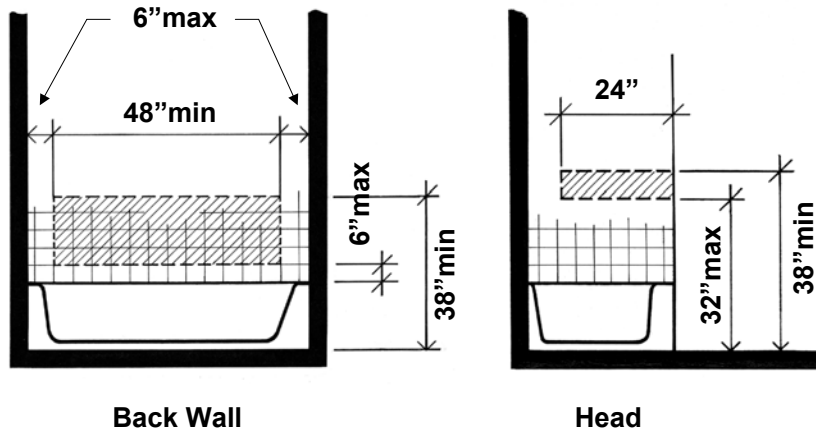
Notes:

Reinforcing in Walls for Grab Bars



Notes:

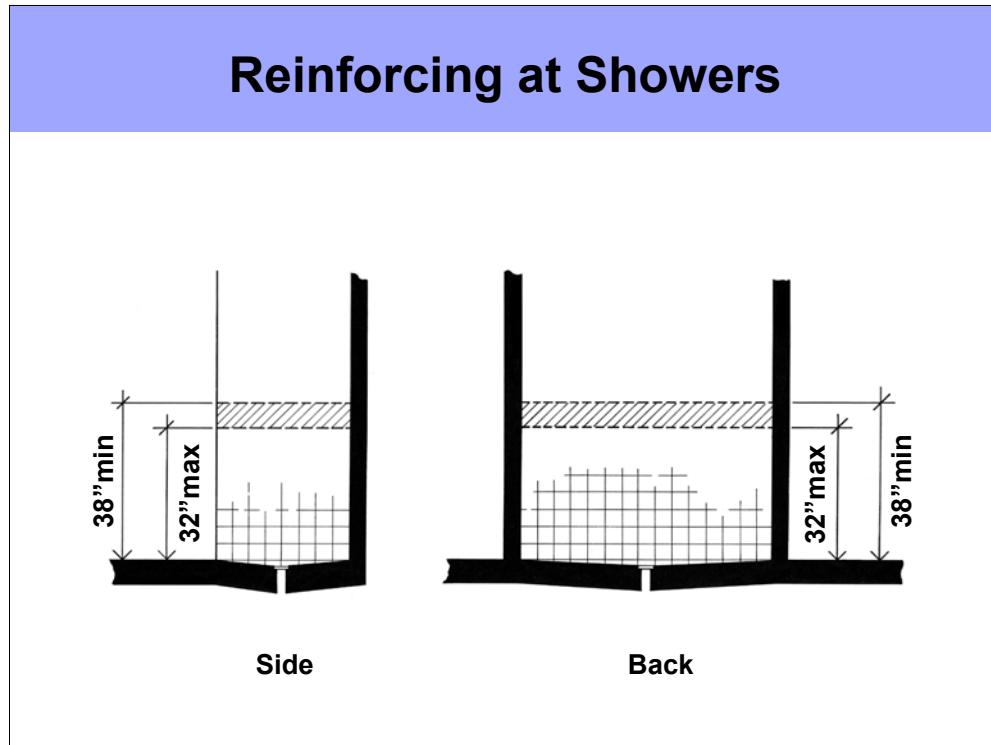
Reinforcing at Bathtubs



Reinforcing at Bathtubs

At bathtubs also, the Guidelines illustrate minimum areas around the back wall and both end walls of a bathtub where reinforcing must be placed.

Notes:



Reinforcing at Showers

Finally, the Guidelines illustrate minimum areas to reinforce in the walls around showers.

In certain situations, for instance, if a shower is the only bathing fixture, it is also required to have reinforcing for a wall-hung shower seat.

Notes:

What's the Solution?

- ☐ Install reinforcing during construction or use factory reinforced tub and shower units



Notes:

Common Design and Construction Violations and Solutions - Agenda		
		• Overview of the Fair Housing Act
		• Requirement 1
		• Requirement 2
		• Requirement 3
		• Requirement 4
		• Requirement 5
		• Requirement 6
		• Requirement 7
		• Resources

Notes:

Refer to page 7.1 of the Design Manual.

Requirement 7

Usable Kitchens and Bathrooms

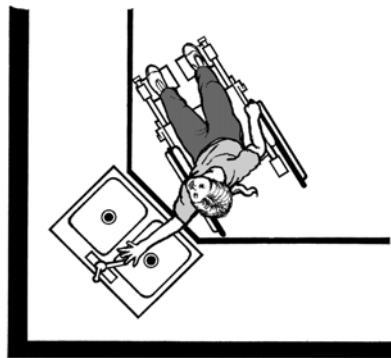
“...covered multifamily dwellings with a building entrance on an accessible route shall be designed and constructed in such a manner that all premises within covered multifamily dwelling units contain usable kitchens and bathrooms such that an individual in a wheelchair can maneuver about the space.”

Notes:

Requirement 7

What Are the Common Violations?

- ☐ The kitchen lacks a 30"x48" clear floor space parallel to and centered on the sink and range



Not Allowed

Notes:

**No 30"x48" Clear Floor Space
Parallel to and Centered on Sink**



Not Allowed

**No 30"x48" Clear Floor Space
Parallel to and Centered on Sink**

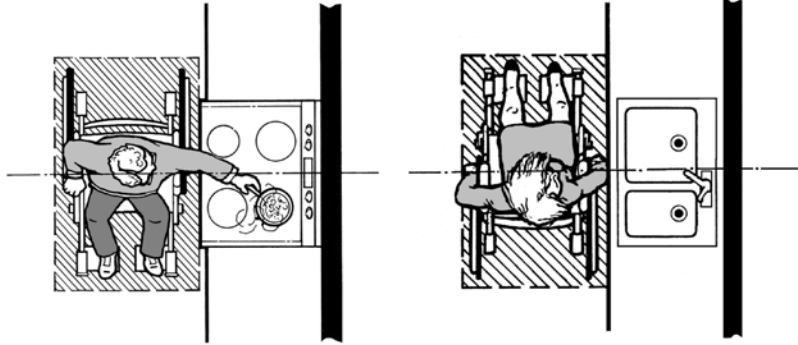
Unless a kitchen sink has ANSI-compliant knee space beneath, the Guidelines require a 30"x48" clear floor space that is parallel to and centered on the kitchen sink.

This photograph shows a sink jammed tight into the corner of an L-shaped cabinet design.

In this situation, in order to meet this requirement, there would need to be 24" from the centerline of the sink to the face of the adjacent cabinets.

Notes:

30"x48" Centered on Sink and Range



30"x48" Centered on Sink and Range

The clear floor space provided in this parallel and centered orientation allows a person using a wheelchair to make a close side approach, permitting a safer and shorter reach to the sink and range/cooktop.

Notes:

What's the Solution?

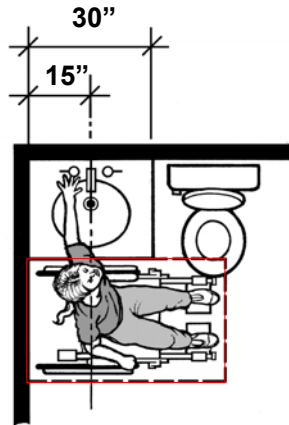
- ❑ Provide 30"x48" clear floor space centered at the kitchen sink



Notes:

Requirement 7 What are the Common Violations?

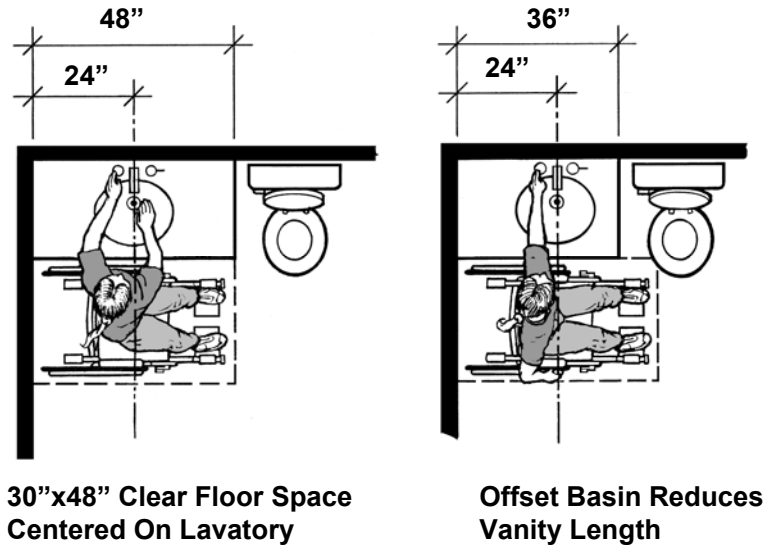
- ☐ The bathroom lacks a 30"x48" clear floor space parallel to and centered on the lavatory



Not Allowed

Notes:

Clear Floor Space at Lavatories



Clear Floor Space at Lavatories

As at kitchen sinks, the Guidelines also require a 30"x48" clear floor space at the lavatory so a person who uses a wheelchair can get close enough to the basin and controls to use the fixtures.

The required 30"x48" clear floor space must be parallel to and centered on the basin.

For a 48" wide vanity up against an adjacent side wall, the basin could be centered. However, for a 36" wide vanity the sink would have to be offset to obtain the required clear floor space.

Notes:

What's the Solution?

- ❑ Center at least a 30"x48" clear floor space in front of bathroom lavatories



Notes:

Exercise

Exercise Objective:

You will learn how to identify common violations by reviewing and analyzing photographs of features that do not comply with design and construction standards. You will then discuss the areas of non-compliance, the effects of the non-compliance, and strategies for achieving a design that complies with the standards.

Exercise Assignment:

Identify the violations shown in the photographs and suggest solutions.

Exercise #1



Violations and Suggested Solutions

Exercise #2



Violations and Suggested Solutions

Exercise #3



Violations and Suggested Solutions

Exercise #4



Violations and Suggested Solutions

Exercise #5



Violations and Suggested Solutions

	Common Design and Construction Violations and Solutions - Agenda
	<ul style="list-style-type: none">• Overview of the Fair Housing Act• Requirement 1• Requirement 2• Requirement 3• Requirement 4• Requirement 5• Requirement 6• Requirement 7• Resources

Notes:

Fair Housing Accessibility **FIRST**

Fair Housing Accessibility **FIRST**
Information Line
1-888-341-7781 V/TTY



Fair Housing Accessibility **FIRST**
Website
www.FairHousingFIRST.org



Notes:



Comprehensive Training Curriculum

Course Title	Time (hours)
Fair Housing Act Accessibility Requirements Overview	1 (Short) or 4 (Long)
Design and Construction Requirements of the Fair Housing Act: Technical Overview	3
Disability Rights Laws	1.5
Fair Housing Act Enforcement	1.5
Strategies for Compliant Kitchens	1.5
Strategies for Compliant Bathrooms	1.5
Accessible Routes	1.5
Accessible Public and Common Use Areas	1.5
Common Design and Construction Violations and Solutions	1.5
Making Housing Accessible Through Accommodations and Modifications	1.5

www.FairHousingFIRST.org
(888) 341-7781

Fair Housing Act and Related Standards

Standard	Where to Obtain
Fair Housing Act as Amended (Title VIII of the Civil Rights Act)	www.FairHousingFIRST.org (888) 341-7781 (V/TTY)
Fair Housing Act Guidelines*	www.FairHousingFIRST.org (888) 341-7781 (V/TTY)
Fair Housing Act Design Manual*	Disseminated at training www.huduser.org (800) 245-2691 TDD: (800) 483-2209
International Building Code*	www.intlcode.org (703) 931-4533
ANSI A117.1 (1986)*	www.intlcode.org (703) 931-4533
CABO/ANSI A117.1 (1992)*	www.bocai.org (800) 214-4321
ICC/ANSI A117.1 (1998)*	www.intlcode.org (703) 931-4533
Code Requirements for Housing Accessibility 2000 (CRHA)*	www.bocai.org (800) 214-4321
Section 504 of the Rehabilitation Act	www.hudclips.org (301) 519-5395
Uniform Federal Accessibility Standards	www.access-board.gov (800) 872-2253, TTY: (800) 872-2253
Architectural Barriers Act of 1968	www.access-board.gov (800) 872-2253, TTY: (800) 872-2253
Americans with Disabilities Act of 1991, Title II and Title III	www.access-board.gov (800) 872-2253, TTY: (800) 872-2253
ADA Accessibility Guidelines	www.access-board.gov (800) 872-2253, TTY: (800) 872-2253

**Denotes HUD Safe Harbor*

Publications

Listed in alphabetical order with the following designations based on topic.

C – Code; D – Design; L – Legal; DA – Disability Advocacy

Type	Resource Name	Description	Where to Obtain
D	Accessible Cabinetry	Describes state-of-the-art cabinetry designed to facilitate use by people with disabilities.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
D	Accessible Environments: Toward Universal Design	Overview of the concept of universal design in everyday environments. Contains design illustrations and history of the disability rights movement.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
D	Accessible Plumbing	Describes state-of-the-art in accessible plumbing fixtures and accessories.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
D	Accessible Stock House Plans Catalog	Contains floor plans and perspectives for six accessible homes.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
D	A Consumer's Guide to Home Adaptation	Includes worksheets for evaluating needs in the home, illustrated construction plans for grab bars, ramps, and other accessible elements, and resource listings for products.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
C	HUD Review of Model Building Codes Final Report		www.hud.gov/offices/fheo/disabilities/modelcodes/
DA	New Mobility Magazine		www.newmobility.com
L	The New Fair Multifamily Housing: A Design Primer to Assist in Understanding the Accessibility Guidelines of the FHAct	Provides a basic understanding of the accessibility requirements of the FHAct. Also includes illustrated solutions and examples from existing projects.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
L	Rights and Responsibilities of Tenants and Landlords under the Fair Housing Amendments Act	Outlines the rights and responsibilities of tenants with disabilities and landlords under the FHAct.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)
D	Tenant's Guide to Apartment Modifications: An Idea Source Pamphlet to Simple, Low-cost Modifications to Increase Accessibility in Apartments	Presents illustrated ideas for low-cost modification that are commonly made to rental dwellings.	www.design.ncsu.edu/cud/ (800) 647-6777 (voice or TTY)

Websites and Organizations

Listed in alphabetical order with the following designations based on topic.

C – Code; D – Design; DA – Disability Advocacy; G – Government; L – Legal; T – Trade ; O – Other

Type	Organization	URL
O	American Association of Retired Persons	www.aarp.org
DA	American Association of People with Disabilities	www.aapd.org
G	Access Board	www.access-board.gov
C	Adaptive Environments	www.adaptenv.org
DA	American Association of People with Disabilities	www.aapd-dc.org
T	American Bankers Association	www.aba.com
T	American Bar Association	www.abanet.org
DA	American Disabled for Attendant Programs Today	www.adapt.org
T	American Institute of Architects	www.aia.org
DA	American Seniors Housing Association	www.seniorshousing.org
T	American Society of Civil Engineers	www.asce.org
T	American Society of Interior Designers	www.asid.org
L	Bazelon Center for Mental Health Law	www.bazelon.org
D	Bob Vila	www.bobvila.com - special features
D	Center for Inclusive Design and Environmental Access	www.ap.buffalo.edu
D	Center for Universal Design	www.design.ncsu.edu/cud/index.html
G	Centers for Medicare and Medicaid Services	www.cms.gov
DA	Consortium for Citizens with Disabilities	www.c-c-d.org
D,L	Cornucopia of Disability Information (CODI)	www.codi.buffalo.edu
G	Department of Agriculture	www.usda.gov
G	Department of Justice	www.usdoj.gov
G	Department of Treasury	www.treasury.gov
DA	Disability Rights Action Coalition for Housing	www.libertyresources.org/housing/nac.html
DA	Eastern Paralyzed Veterans Association	www.epva.org
T	Institute for Real Estate Management	www.irem.org
C	International Code Council	www.intlcode.org
L	The John Marshall Law School Fair Housing Legal Support Center	http://law170.jmls.edu/
D	NAHB Research Center	www.nahbrc.org
T	National Affordable Housing Mgmt. Assoc.	www.nahma.org
T	National Apartment Association	www.naahq.org
T	National Association of Home Builders	www.nahb.org
T	National Association of Realtors	www.nar.realtor.com
T, D	National Association of the Remodeling Industries	www.nari.org
G	National Council on Disability	www.ncd.gov
C	National Conference of States on Building Codes and Standards (NCSBCS)	www.ncsbc.org
DA, L	National Fair Housing Advocate Online	www.fairhousing.com
DA	National Fair Housing Alliance	www.nationalfairhousing.org
D	National Kitchen and Bath Association	www.nkba.org
T	National Low Income Housing Coalition	www.nlihc.org
T	National Multi Housing Council	www.nmhc.org
DA	National Organization on Disability	www.nod.org
D, DA	National Resource Center on Supportive Housing and Home Modification	www.homemods.org
DA	Paralyzed Veterans of America	www.pva.org
D	Technical Assistance Collaborative	www.toolbase.org
DA	Wemedia	www.wemedia.com
DA	World Institute on Disability	www.wid.org

Common Violations of the Fair Housing Act Design and Construction Requirements

The Fair Housing Act requires that new construction of covered multifamily housing, both private and public, comply with the Fair Housing Act's design and construction requirements. Covered multifamily housing is housing where there are four or more units in a building. It includes all of the ground floor units, and, in an elevator building, all units. It applies to housing that was designed or constructed since March 13, 1991.

Successful accessibility is often measured in inches, so attention to detail can make the difference between achieving access and excluding or injuring someone. When the minimum requirements are not met, the results can limit access for a person with a disability or exclude them from access altogether. Sometimes it can be dangerous for them.

This is a sampling of common accessibility errors or omissions that have been identified through review of a number of properties that do not comply with the requirements. It is not intended to be comprehensive or exhaustive. Any failure to comply with the requirements violates the Fair Housing Act.

REQUIREMENT 1 – ACCESSIBLE BUILDING ENTRANCE ON AN ACCESSIBLE ROUTE

Error: The dwelling entrance has steps or the entrance walk is too steep, exceeding allowable slopes. Accessible entrance walks cannot be steeper than 1:20 (5%) unless they are designed as ramps. Ramps cannot be steeper than 1:12 (8.33%) and must have railings and edge protection.

Result: Steps can block access completely for people who are disabled. Steep ramps without safety provisions like handrails, edges and landings can be dangerous because people using walkers, canes and wheelchairs may fall off them. Wheelchair users and other people with disabilities cannot go up and down the ramp or may lose control while using it.

Error: Even though an accessible entrance walk may be provided to the dwelling entrance, many times it does not connect to a pedestrian arrival area (often a parking lot). Typical barriers are no curb ramps and no access aisles.

Result: People with disabilities cannot travel from the site entry points to accessible entrances. They cannot get from parking to the building entrance.

Common Violations of the Fair Housing Act Design and Construction Requirements

REQUIREMENT 2 – ACCESSIBLE AND USABLE PUBLIC AND COMMON USE AREAS

- Error: Curb ramps may be steep, lack side wings, or be accessed only from heavily trafficked areas. Curb ramps must be designed and built in a way that is compliant with acceptable standards (ANSI 1986, 1992, 1998).
- Result: Steep and improperly designed curb ramps are a hazard for everyone and can cause injury to both ambulatory and non-ambulatory persons.
- Error: There are not enough curb ramps provided to make the site accessible.
- Result: People using wheelchairs may run into “dead ends” at sidewalks causing them to travel far in excess of persons who can step over a 6” curb, or it may cause them to use the parking lot and driveway as a means of getting around the site. If automobile and pedestrian traffic is segregated on a site, then persons with disabilities should be able to use the pedestrian sidewalk system.
- Error: There is no accessible parking at site facilities. Accessible parking is required at all facilities such as mailbox kiosk, laundry rooms, playgrounds, tennis courts, leasing office, garbage dumpsters, etc.
- Result: Many sites are large, and the most viable means for a person using a wheelchair or other mobility aid to enjoy full use of the housing is to get in their cars and drive to the facility. Also, many sites are too steep for a pedestrian accessible route to connect each building entrance with site facilities. When accessible parking is not provided at facilities and amenities, persons with disabilities may not be able to get to and use the facility.

REQUIREMENT 3 – USABLE DOORS

- Error: Doors to walk-in closets and storage rooms do not provide a nominal 32” clear opening (31 5/8”).
- Result: Many people who use wheelchairs, scooters or walkers cannot use a door with a less than 32” clear opening because the wheelchair is too wide to get through the door. All doors intended for passage must be accessible.

Common Violations of the Fair Housing Act Design and Construction Requirements

Error: The second door into a bathroom, when more than one door is provided, does not provide a nominal 32" clear opening (31 5/8"). Many times a bathroom has both a door from a hallway and a second door from a bedroom. Both doors are required to be accessible.

Result: Multiple doors into a bathroom are provided as an amenity to residents to allow privacy and convenience. If one of the doors is too narrow, this amenity/feature may not be available to residents or their guests who are in wheelchairs.

Error: Doors lack usable hardware.

Result: Some people with disabilities cannot open a door if the door hardware requires tight grasping or twisting the wrist in order to open the door.

REQUIREMENT 4 – ACCESSIBLE ROUTE INTO AND THROUGH THE UNIT

Error: Level changes at primary entrances exceed the allowable 1/2" between the finished floor of the unit and the exterior entry landing.

Result: Even small steps or level changes can completely block access for people who are disabled.

Error: Door thresholds exceed the maximum height of 3/4" and are not beveled 1:2 or less.

Result: Abrupt level changes can be extremely difficult to go over for people using mobility aids such as wheelchairs, walkers and canes. Also, people who do not lift their feet completely may experience difficulty passing over excessively high thresholds that are not beveled.

REQUIREMENT 5 – LIGHT SWITCHES, ELECTRICAL OUTLETS, THERMOSTATS AND OTHER ENVIRONMENTAL CONTROLS IN ACCESSIBLE LOCATIONS.

Error: Outlets are placed too low. Both outlets must be located at least 15" above the finished floor.

Result: People with limited reach, such as people using wheel chairs and people who have back problems, may not be able to reach and use the outlet.

Common Violations of the Fair Housing Act Design and Construction Requirements

Error: Switches are placed too high. Thermostats and other environmental switches are placed higher than 48" above the finished floor.

Result: People with limited reach may not be able to reach the thermostats and switches.

REQUIREMENT 6 – REINFORCING IN WALLS FOR GRAB BARS

Error: Reinforcing is not placed in walls during construction around tubs, toilets and showers.

Result: People who need to install a grab bar may not be able to adapt their dwelling without extensive construction. Fiberglass tub/shower units, which are very frequently used, are most effectively reinforced by having the reinforcement cast into the side walls of the unit at the factory.

REQUIREMENT 7 – USABLE KITCHENS AND BATHROOMS

Error: In the kitchen there is not 30" x 48" clear floor area parallel to and centered on the kitchen sink. Many times the sink is positioned into the "elbow" of an L-shaped kitchen, or sometimes in a small angled section of counter that doesn't provide a full 48" clear floor area.

Result: The purpose of the 30" x 48" clear floor area in front of the sink is to allow people using a wheelchair to position themselves in front of the sink and use it. If there is not a clear floor area centered in front of the sink, a person using a wheelchair may encounter obstructions that can keep them from being able to reach the faucets and use the sink.

Error: Sinks in bathrooms are not positioned with 30" x 48" clear floor area parallel to and centered on the sink.

Result: A person using a wheelchair cannot reach faucets or the sink to use it.